UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,502	12/31/2003	Nicholas P. R. Hill	59372US002	1812

32692 7590 11/15/2006

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
LUI, DONNA V	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,502	HILL ET AL.	
	Examiner	Art Unit	
	Donna V. Lui	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) *29-54* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-54* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/20/2004; 12/16/2005*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-28, drawn to a touch sensitive apparatus capable of sensing bending wave vibrations through sensors coupled to active buffer circuits and an excitation transducer, classified in class 345, subclass 173.

II. Claims 29-54, drawn to a touch sensitive device and a method of use by performing a variety of calibrations and determining dimensions of the touch plate, classified in class 345, subclass 173.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as sensors configured to sense bending waves in the touch plate, an excitation transducer for inducing bending waves and a sampling frequency is used to alias the bending wave signals. See MPEP § 806.05(d).

3. Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

4. Applicant's election of Group I in the reply filed on September 11, 2006 is acknowledged. In a telephone interview, applicant has indicated the election is made with traverse. However, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Inventorship

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14 and 18 of copending Application No. 10/750,290. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 2 of the instant application correspond to claims 14 and 18 of Application No. 10/750,290, where the limitation of the instant application "the controller configured to compute information related to a tough on the touch plate responsive to sense signals received by the sensors" is equivalent to the limitation "the controller correcting for dispersion in the sensor signals, determining a location of the touch using the dispersion

corrected signals, and reconstructing impulses representative of impulses generated by the touch to the touch sensitive device" of Application No. 10/750,290. Please note that the limitation of the instant application is broader than the limitation of Application No. 10/750,290.

This is a provisional obviousness-type double patenting rejection.

Instant Application 10/750,502	Application 10/750,290	Application 10/750,290
Claim 1	Claim 14	Claim 18
A touch sensitive apparatus, comprising: a touch plate; a plurality of sensors coupled to the touch plate;	A touch sensitive apparatus, comprising: a touch plate; a plurality of sensors coupled to the touch plate,	
An excitation transducer coupled to the touch plate and configured to induce bending waves in the touch plate;		An excitation transducer coupled to the touch plate and configured to induce bending waves in the touch plate;
A plurality of active buffer circuits, each of the active buffer circuits respectively coupled to one of the sensors; and		A plurality of active buffer circuits, each of the active buffer circuits respectively coupled to one of the sensors; and
A controller coupled to the sensors via the active buffer circuits and to the excitation transducer via a non-actively buffered connection,		A controller coupled to the sensors via the active buffer circuits and to the excitation transducer via a non-actively buffered connection,
The controller configured to compute information related to a touch on the touch plate responsive to sense signals received by the sensors.	*The controller correcting for dispersion in the sensor signals, determining a location of the touch using the dispersion corrected signals, and reconstructing impulses representative of impulses generated by the touch to the touch sensitive device*	

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 25** recites the limitation "the excitation sensor" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 1-14, 16-20, and 25-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill (Pub. No.: US 2001/0006006 A1, herein after referred to as "Hill PA") and in view of Paradiso et al. (Pub. No.: US 2003/0217873 A1).

With respect to **Claim 1**, Hill PA teaches a touch sensitive apparatus *(See figure 6, [0102], lines 1-3)*, comprising: a touch plate *(element 24)*; a plurality of sensors *(element 26; [0102], lines 6-10)* coupled to the touch plate, each of the sensors configured to sense bending waves in the touch plate; an excitation transducer *(element 31; [0102], lines 4-6)* coupled to the touch plate and configured to induce bending waves in the touch plate; a controller coupled to the sensors and to the excitation transducers via a non-actively buffered connection *(See figure 8, elements 31, 34, 48, 26, 54)*; and the controller *(elements 34, 38, and 54; [0104]; [0105], lines 5-*

8) configured to compute information related to a touch on the touch plate responsive to sense signals received by the sensors.

Hill PA does not mention a plurality of active buffer circuits, each of the active buffer circuits respectively coupled to one of the sensors nor does Hill PA mention a controller coupled to the sensors via the active buffer circuits and to the excitation transducer via a non-actively buffered connection.

Paradiso teaches a plurality of active buffer circuits *(See figure 4, element 17)*, each of the buffer circuits respectively coupled to one of the sensors *(See figure 2, elements 12_1, 12_2, 12_3, 12_4; [0028], lines 2-7)* and a controller coupled to the sensors via the active buffer circuits *([0029]; elements 16, 18, 20, and 22 comprise a controller)*. Paradiso modifies the touch sensitive apparatus of Hill PA by mounting pre-amplifier circuits with each sensor.

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a plurality of active buffer circuits, each of the active buffer circuit respectively coupled to one of the sensors, as taught by Paradiso to the touch sensitive apparatus of Hill PA resulting in a controller coupled to the sensors via the active buffer circuits and to the excitation transducer via a non-actively buffered connection so as to increase signal strength and improve the signal-to-noise ratio *(Paradiso: [0028], lines 4-5)*.

With respect to **Claim 2**, the apparatus of claim 1, Hill PA teaches the information related to the touch comprises touch location *([0105], lines 5-8)*.

With respect to **Claim 3**, the apparatus of claim 1, Hill PA teaches the information

related to the touch comprises information concerning detection of a lift-off of the touch *([0083], lines 8-11; [0084], lines 1-7; note that since information related to a touch is alteration of a bending wave by either disturbing the path of bending waves already in the panel or by generating new bending waves, then information concerning lift-off of a touch is equivalent to the panel having normal uninterrupted bending waves or no longer generating bending waves).*

With respect to **Claim 4**, the apparatus of claim 1, Hill PA teaches the touch plate is substantially rectangular *(See figure 6)*; and the excitation transducer is positioned proximate a peripheral edge of the touch plate *(See figure 1, [0081]).*

Hill PA does not teach the plurality of sensors comprises four sensors each positioned at a respective corner of the touch plate.

Paradiso teaches a plurality of sensors comprises four sensors each positioned at a respective corner of the touch plate *(See figure 2, elements 12_1, 12_2, 12_3, 12_4).* Paradiso modifies the apparatus of Hill PA by placing the four sensors at a respective corner of the touch plate such that the excitation transducer is at position equivalent to element 30.

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a plurality of sensors comprise four sensors each positioned at a respective corner of the touch plate, as taught by Paradiso, to the apparatus of Hill PA so as to allow for redundancy and error checking *([0026], lines 6-9).*

With respect to **Claim 5**, the apparatus of claim 1, Hill PA teaches the plurality of sensors comprises piezoelectric sensors *([0058], lines 4-8).*

With respect to **Claim 6**, the apparatus of claim 5, Hill PA teaches the excitation transducer comprises a piezoelectric transducer *([0055], lines 1-3).*

With respect to **Claim 7**, the modified apparatus of claim 1 teaches each of the active buffer circuits comprises an operational amplifier (Paradiso: See figure 4). Although Paradiso does not mention the use of a field effect transistor in the operational amplifier, it would have been obvious for a person of ordinary skill in the art at the time the invention was made to have an active buffer circuit comprised of a field effect transistor, in the modified apparatus of claim 1, so as to provide better performance.

With respect to **Claim 8**, the modified apparatus of claim 1 teaches the plurality of sensors *(Hill PA: [0103], lines 1-3)*, the plurality of active buffer circuits *(Paradiso: [0026], lines 1-4; [0028], lines 5-7)*, and the excitation transducer are respectively disposed on the touch plate.

With respect to **Claim 9**, the apparatus of claim 1, Hill PA teaches the excitation transducer *([0054], three terminal devices)* is configured to induce bending waves in the touch plate and to sense bending waves in the touch plate.

With respect to **Claim 10**, the apparatus of claim 1, wherein each of the sensors is configured to provide a differential sense signal to a balanced input of one of the active buffer

circuits, and each of the active buffer circuits is coupled to a balanced input of the controller *(Paradiso: See figure 4, note that since the active buffer is referenced to ground a balanced input is provided to the active buffer, resulting in an active buffer circuit that is coupled to a balanced input of the controller).*

With respect to **Claim 11**, the apparatus of claim 1, Hill PA teaches the sensors *(See figure 6, element 26)* produce bending wave signals responsive to the induced bending waves *([0105], note that bending wave signals are equivalent to analogue input signals)* but does not mention the controller computes relative dimensions of the touch plate using the bending wave signals.

Paradiso teaches a controller that computes relative dimensions of the touch plate using bending wave signals *([0072]; [0073]; note that the attenuation of a signal resulting from a touch is a function of the maximum distance between the impact origin and the transducers, which is equivalent to computing relative dimensions of the touch plate).*

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a controller that computes relative dimensions of the touch plate using the bending wave signals, as taught by Paradiso, to the apparatus of Hill PA so as to provide rapid response time, making it suitable for interactive applications *([0075], lines 1-2)*, improve transducer position optimization, improve impact source identification accuracy, and improve correspondence between impacts and interactive display responses *([0044], lines 1-5).*

With respect to **Claim 12**, the apparatus of claim 1, Hill PA teaches the sensors *(See*

figure 6, element 26) produce bending wave signals responsive to the induced bending waves *([0105], note that bending wave signals are equivalent to analogue input signals)* but does not mention the controller computes absolute dimensions of the touch plate using the bending wave signals.

Paradiso teaches a controller that computes absolute dimensions of the touch plate using the bending wave signals *([0043], lines 10-14; [0072], lines 1-2; note that have a first dimension a and a second dimension b is equivalent to absolute dimensions).*

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a controller that computes absolute dimensions of the touch plate using the bending wave signals, as taught by Paradiso, to the apparatus of Hill PA so as to improve transducer position optimization, improve impact source identification accuracy, and improve correspondence between impacts and interactive display responses *([0044], lines 1-5).*

With respect to **Claim 13**, the apparatus of claim 1, Hill PA teaches the sensors *(element 26)* produce bending wave signals responsive to the induced bending waves *([0105]; note that the analogue input signals are equivalent to the bending wave signals produced by the sensors)*; and the controller computes a phase response of each of the sensors using a dispersion relation and a measured phase response *([0107] to [0113]).* Hill PA does not mention the controller computes dimensions of the touch plate using the bending wave signals nor does Hill PA mention the controller computes a phase response for each of the sensors using computed touch plate dimensions.

Paradiso teaches a controller *(See figure 2, element* 22) that computes dimension of the touch plate using the bending wave signals *([0043]).*

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a controller compute dimensions of the touch plate using bending wave signals, as taught by Paradiso, to the apparatus of Hill PA, resulting in a controller that computes a phase response of each of the sensors using the computed touch plate dimensions, a dispersion relation and a measured phase response so as to improve system operation in the areas of transducer position optimization, impact source identification accuracy, impact locating accuracy; and correspondence between impacts and interactive display responses *([0043], lines 1-5).*

With respect to **Claim 14**, the apparatus of claim 1, Hill PA teaches the excitation transducer induces bending waves in the touch plate in response to a non-audible tone signal *([0041], lines 7-9; [0058], note that active sensing uses ultrasonic frequencies which are equivalent to non-audible tone signals).*

With respect to **Claim 16**, the apparatus of claim 1, wherein the excitation transducer induces bending waves in the touch plate in response to a non-audible multiple tone signal *([0041], lines 7-9; [0058], note that active sensing uses ultrasonic frequencies which are equivalent to non-audible tone signals; [0105], lines 1-2, note that having bending waves (a plural amount) is indicative of having non-audible multiple tone signals).*

With respect to **Claim 17**, the apparatus of claim 16, Hill PA teaches the multiple tone signal comprises tones having frequencies that are spatially non-periodic *([0124], note that the frequencies are non-periodic when applying the Fourier transform).*

With respect to **Claim 18**, the apparatus of claim 1, Hill PA teaches the excitation transducer induces a non-audible broadband noise stimulus in the touch plate *([0042], [0046]).*

With respect to **Claim 19**, the apparatus of claim 1, wherein the excitation transducer induces bending waves in the touch plate in response to receiving a swept tone signal from the controller, the sensors producing bending wave signals responsive to the induced bending waves *([0052], note that the swept sine wave is equivalent to a swept tone signal).*

With respect to **Claim 20**, the apparatus of claim 19, wherein the controller comprises a demodulator that demodulates the bending wave signals synchronously with respect to the swept tone signal *([0052], chirp demodulation circuit).*

With respect to **Claim 25**, the apparatus of claim 1, Hill PA teaches the excitation transducer is configured to induce bending waves in the touch plate and to sense bending waves in the touch plate *([0054]; three terminal devices).*

Hill PA does not mention the controller further comprises wake-up circuitry coupled to the excitation sensor, the wake-up circuitry configured to generate a wake-up signal in response

to the excitation sensor sensing a touch to the touch plate and to communicate the wake-up signal to the controller.

Paradiso teaches the controller *([0076], lines 21-36; [0077], lines 1-6)* further comprises wake-up circuitry *(wake-up circuitry is equivalent to circuitry associated with the "range-finding radar")* coupled to excitation sensors *(See figure2, elements 12, 30, and 32)*, the wake-up circuitry configured to generate a wake-up signal in response to the excitation sensor sensing a touch to the touch plate and to communicate the wake-up signal to the controller. Paradiso modifies the apparatus of Hill PA by having the controller further comprise wake-up circuitry and having the excitation transducer and sensors of Hill PA positioned equivalently to that of Paradiso *(Paradiso: See figure 2)*.

It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have the controller further comprise wake-up circuitry coupled to sensors, the wake-up circuitry configured to generate a wake-up signal in response to the excitation sensor sensing a touch to the touch plate and to communicate the wake-up signal to the controller, as taught by Paradiso, to the apparatus of Hill PA, so as to reduce power consumption.

With respect to **Claim 26**, the modified apparatus of claim 25, teaches the active buffer circuits transition from a sleep mode to an operating mode responsive to the controller receiving the wake-up signal *([0076], lines 26-33; limiting surface impact analysis is equivalent to active buffer circuits in a sleep mode)*.

With respect to **Claim 27**, the apparatus of claim 1, Hill PA teaches a display coupled to

the touch sensitive apparatus *([0062], lines 1-3).*

With respect to **Claim 28**, the modified apparatus of claim 1 teaches a display coupled to the touch sensitive apparatus *(Hill PA: [0062], lines 1-3)(Paradiso: See figure 2)*; and a host processor (*Hill PA: See figure 8, element 34) (Paradiso: [0076], lines 3-5)* coupled to the display and the touch sensitive apparatus *(Hill PA: element 48).*

Allowable Subject Matter

10. **Claims 15, and 21-24** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

With respect to **Claim 15**, the apparatus of claim 1, Hill PA teaches the controller comprises an analog-to-digital converter (ADC) having a sampling frequency *([0105])*, but does not mention the controller generating a tone signal having a frequency substantially equal to that of the sampling frequency of the ADC and communicating the generated tone signal to the excitation transducer.

With respect to **Claim 21**, the apparatus of claim 1, Hill PA teaches the controller comprises an analog-to-digital converter (ADC) having a sampling frequency f.sub.s *([0105])*, but does not mention the excitation transducer induces bending waves in the touch plate having frequencies greater than f.sub.s/2.

With respect to **Claim 23**, the apparatus of claim 1, Hill PA teaches the controller comprises an analog-to-digital converter (ADC) having a sampling frequency, f.sub.s *([0105])*, but does not mention the excitation transducer induces bending waves in the touch plate having a frequency substantially equal to f.sub.s.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna V. Lui whose telephone number is (571) 272-4920. The examiner can normally be reached on Monday through Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Donna V Lui

Examiner
Art Unit 2629

AMR A. AWAD
SUPERVISORY PATENT EXAMINER